

Mr. Roberts, that I did not notice the appearance in the satellite he describes. It appeared black, but not so decidedly black as a shadow; it performed the transit, half of it seen on a bright mass, half on a dark portion of the equatorial zone, as in sketch No. 1. On emersion, I have noted "the satellite appeared as a disk, the one-half on the planet forming a notch in the limb, the other half clear of the planet, just discernible; when quite clear of the limb, the satellite shone with a faint dusky light." I did not test its visibility with a less aperture.

*Burton on Trent, June 9th, 1873.*

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*Note on the Disappearance of the Coloured Equatorial Belt of Jupiter.* By John Browning, Esq.

The colour of the equatorial belt of *Jupiter* was fading during the last weeks of the previous opposition; during the present opposition the colour has been scarcely, if at all, perceptible; there is a conspicuous absence of any intense markings on the surface of the planet, the copper-coloured belts being fainter than usual. Great changes have taken place in the fainter markings, and some of these with great rapidity. On several occasions the belts have appeared inclined at a considerable angle to the equator. During the whole of the opposition the definition has been so uniformly bad that I have found it useless to make drawings of the planet.

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*Note on the Mass of Jupiter.* By W. T. Lynn, B.A.

In *Monthly Notices*, vol. xxvii. No. 1, for November, 1866, I had the honour to lay before the Society an account of a determination of the mass of *Jupiter* as deduced by Professor Krüger from the observations of *Themis*, a planet which, from the position which it sometimes occupies with respect to *Jupiter*, offers peculiar advantages for the purpose in question. He has now availed himself of the fresh material afforded by subsequent observations, and also succeeded in removing an uncertainty to which one of his former normal places was exposed; and the result has been communicated to the *Astronomische Nachrichten* (No. 1941).

It gives for the mass of *Jupiter*, compared with the Sun  $\frac{1}{1047.538}$ , and it will be of interest to compare this with other values of the same quantity determined by different methods. Airy's last-determined value from the motions of the satellites was  $\frac{1}{1046.77}$ ; Bessel's in the same manner  $\frac{1}{1047.879}$ ; Captain Jacobs', also from observations of the satellites made by himself at Madras in

1857,  $\frac{1}{1047.54}$ ; Professor Möller's, from the motions of Faye's Comet,  $\frac{1}{1047.788}$ . As the difference between the largest and smallest of these values does not exceed the  $\frac{1}{1000}$ th part of the mean, we may consider this important element in the solar system as well established; and it is very satisfactory to find determinations made by different methods so well confirmatory of each other.

*Notes on Mars, 1873.* By E. B. Knobel, Esq.

Observations of *Mars* at the opposition of 1873 have been attended with many atmospheric impediments. The planet's low altitude, coupled with unsteady air for many nights, has rendered the accurate delineation of its features most difficult.

The accompanying series of seventeen sketches, which I beg to submit to the Society, has been made with an 8½-inch silvered glass reflector, of excellent quality, mounted as an alt-azimuth, and only those sketches are exhibited in which I have confidence in their representing what was actually observed. No sketch was made without the air was sufficiently steady to bear a power of 250, at least, on the planet.

Many features have been noticed agreeing fairly with the observations of Mr. Dawes, but with some noteworthy exceptions—though I should say that, not having seen Mr. Dawes's drawings, except those given by Mr. Proctor in his *Other Worlds*, and those in the *Astronomical Register* for 1865, I can only judge of the agreement or disagreement by comparison with Mr. Proctor's charts of *Mars* in the *Monthly Notices* for January 1873. And here I must refer to the beautiful accuracy of some of these charts in representing certain aspects of the planet. Sketch No. 14, for instance, might almost have been copied from one of them. The most remarkable exception is shown in sketches Nos. 5 to 13, in which a dark marking is depicted stretching nearly to the north pole, which I cannot reconcile with any drawings I have seen, except one of Secchi's in Chambers' *Descriptive Astronomy*, with which it agrees very well. This dark marking is well and clearly, though by no means sharply, defined on the west, and from it proceed, in a westerly direction, two bands much less dark, as shown in Sketches Nos. 12 and 13. No trace whatever of any light marking across this dark mass was observed on any occasion, though carefully scrutinised under all powers. Glimpses of a band of light S.E. of it were observed on a few nights, as shown in Sketches Nos. 5 to 9.

Due east of the centre of this dark marking, a white spot was noticed from May 8th to 22nd. On May 19th, at 10.20, and May 22nd, at 11.30, this white spot was seen on the terminator, glistening as bright as the polar ice; and I would remark, though